

Selection and construction of strong points.  
 Construction of deep dugouts.  
 Erection of wire entanglements.  
 Construction of roads, bridges, dams, pontoon boats, pile drivers and railroads.  
 Demolitions of all kinds.  
 Sketching, map reading and map making.  
 Hectographing, blue printing and lithographing.  
 Infantry Drill and Field Service Regulations.  
 Use of and practice with gas masks.  
 Special bayonet instruction under attached British officers.  
 Practice and use of hand grenades.  
 The following work was completed by the Engineers, with the assistance of working parties from the infantry where so noted.

#### RANGES

100-, 200-, 300-, 500- and 600-yard rifle ranges were laid off by the Engineers and constructed with the aid of contract labor, which did the clearing, and working parties from the infantry which assisted in some of the work on digging the target butts and fire trenches. These ranges were completed in December and the entire division equipped with the rifle had rifle practice. *See photographs 1 to 5 in pictorial section.*

A machine gun range, a trench mortar range and an artillery range were all constructed under the supervision of the engineers which enabled all arms of the service to practice.

Two divisional and one regimental bayonet run were constructed for the training in bayonet work (*see photograph 6, pictorial section*), which was very thoroughly practiced under the instruction of British officers attached to the division for this purpose.

A hand grenade course was built and instruction in throwing grenades was had under the very able direction of French officer instructors.

#### TRENCHES

A complete system of trenches was laid out by the Engineers and constructed with the assistance of the infantry and a trenching machine operated by the Engineers. This system, as shown on Plate III, was a complete sector, with outposts, fire trench, support trench, intermediate and reserve trenches and the necessary communicating trenches. In these were dug the deep dugouts, machine gun emplacements, and all the accessories necessary to trench warfare and life. A portion of these trenches were riveted and wire entanglements constructed in front of most of the system. *See photograph 7, pictorial section.*

In connection with this system of trenches and the sectors on either side, much work was done in the selecting and construction of strong points. This trench system was used to good advantage in the practice maneuvers of the division and the separate regiments.

Before the construction of this system of trenches there was constructed on a contracted scale a complete set of trenches by the engineers, which also included underground tunnels, splinter proof and bomb proof shelters. *See photograph 8, pictorial section.*

#### OBSTACLES AND WIRE ENTANGLEMENTS

Double apron, French high wire, low wire, and loose wire entanglements were constructed for practice. On account of a shortage of this material it was often necessary to reconstruct the entanglements, using the same materials over.

#### PONTOON AND DAM WORK

In order to have practice in pontoon bridge construction and pile bridges in the water, it was necessary to construct the pontoon boats and pile drivers and also a dam where water would be backed up sufficiently to form a lake. Authority to build a dam at Jones Pond, about two miles from the camp, was obtained